CLAIMS

1. An antenna for receiving electromagnetic signals comprising:

a ground plane with a length and having a vertical axis along said length;

a plurality of dipole radiating elements, said radiating elements comprised of first and second co-located, orthogonal dipoles, said dipoles aligned at first and second predetermined angles with respect to said vertical axis, said radiating elements and ground plane producing first electromagnetic fields in response to said electromagnetic signals;

a plurality of supports, said supports connected to said ground plane and perpendicular to said vertical axis and placed between selected of said plurality of dipole radiating elements;

a plurality of metallic parasitic elements placed in a selected of said plurality of supports, said first electromagnetic fields exciting currents in said metallic parasitic elements, said currents creating second electromagnetic fields, said second electromagnetic fields canceling with portions of said first electromagnetic fields.

2. The antenna of claim 1 whereby said first predetermined angle is substantially equal to +45 degrees with respect to said vertical axis and said second predetermined angle is substantially equal to -45 degrees with respect to said vertical axis.

3. The antenna of claim 1 wherein said parasitic elements are composed of aluminum.

4. The antenna of claim 1 wherein said support comprises an upper surface and said parasitic elements are positioned along said upper surface of said support.

5. The antenna of claim 1 wherein said plurality of supports is located midway between said radiating elements.

6. The antenna of claim 1 wherein said ground plane is composed of metal.

7. The antenna of claim 1 wherein said plurality of radiating elements includes exactly four radiating elements.

8. The antenna of claim 7 wherein said plurality of supports includes exactly two supports.

9. The antenna of claim 1 wherein said radiating elements transmit electromagnetic signals.

10. An antenna for receiving electromagnetic signals comprising:

a ground plane with a length, said ground plane having a vertical axis along said length;

a plurality of radiating elements, said radiating elements comprised of first and second co-located, orthogonal dipoles, said first dipoles aligned at substantially a +45 degree angle with respect to said vertical axis, said second dipoles aligned at substantially a -45 degree angle with respect to said vertical axis, said radiating elements and ground plane producing a first electromagnetic field;

a plurality of supports connected to said ground plane, said supports perpendicular to said vertical axis and placed between selected of said plurality of dipole radiating elements;

a plurality of metallic parasitic elements placed in a selected of said plurality of supports, said first electromagnetic fields exciting currents in said metallic parasitic elements, said currents creating second electromagnetic fields, said second electromagnetic fields canceling with portions of said first electromagnetic fields; and

diversity reception means coupled to said plurality of radiating elements for selecting between said plurality of electrical signals.

11. The antenna of claim 10 wherein said parasitic elements are composed of aluminum.

12. The antenna of claim 10 wherein said parasitic elements are positioned along an upper surface of said supports.

13. The antenna of claim 10 wherein said plurality of supports is located midway between said antennas.

14. The antenna of claim 10 wherein said ground plane is composed of metal.

15. The antenna of claim 10 wherein said plurality of radiating elements includes exactly four radiating elements.

16. A method for providing high isolation for an array of radiating elements comprising the steps of:

providing a ground plane having a vertical axis;

providing a plurality of dipole radiating elements, said radiating elements comprised of first and second co-located, orthogonal dipoles, said dipoles aligned at a predetermined angle with respect to said vertical axis, said radiating elements having a top surface;

producing first electromagnetic fields in said radiating elements;

providing a plurality of supports, and placing said supports perpendicular to said vertical axis and between selected of said plurality of dipole radiating elements;

providing a plurality of metallic parasitic elements placed in a selected of said plurality of supports,

exciting currents in said metallic parasitic elements;

creating second electromagnetic fields radiating from said parasitic elements; and

canceling with portions of said first electromagnetic fields with said second electromagnetic fields.

17. The method of claim 16 comprising the further step of placing said parasitic elements midway between the top surfaces of said radiating elements and said ground plane.

18. The method of claim 16 comprising the further step of orienting the radiating elements at a predetermined angle with respect to the vertical axis of the array.

19. An antenna for receiving electromagnetic signals comprising:

a ground plane with a length and having a vertical axis along said length;

a plurality of dipole radiating elements, said radiating elements comprised of first and second co-located, orthogonal dipoles, said dipoles aligned at first and second predetermined angles with respect to said vertical axis, said antennas radiating elements producing first electromagnetic fields in response to said electromagnetic signals;

a plurality of supports, said supports connected to said ground plane and parallel to said vertical axis and placed adjacent selected of said plurality of dipole radiating elements;

a plurality of metallic parasitic elements placed in a selected of said plurality of supports, said first electromagnetic fields exciting currents in said metallic parasitic elements, said currents creating second electromagnetic fields, said second electromagnetic fields canceling with portions of said first electromagnetic fields.

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20. The antenna of claim 19 whereby said first predetermined angle is substantially equal to +45 degrees with respect to said vertical axis and said second predetermined angle is substantially equal to -45 degrees with respect to said vertical axis.

21. The antenna of claim 19 wherein said parasitic elements are composed of aluminum.

22. The antenna of claim 19 wherein said supports comprises an upper surface and said parasitic elements are positioned along an upper surface of said support.

23. The antenna of claim 19 wherein said plurality of supports is located adjacent to said radiating elements.

24. The antenna of claim 19 wherein said ground plane is composed of metal.

25. The antenna of claim 19 wherein said plurality of radiating elements includes exactly three radiating elements.

26. The antenna of claim 25 wherein said plurality of supports includes exactly two sets of supports.

27. A method for providing high isolation for an array of radiating elements comprising the steps of:

providing a ground plane having a vertical axis;

providing a plurality of dipole radiating elements, said radiating elements comprised of first and second co-located, orthogonal dipoles, said dipoles aligned at a

predetermined angle with respect to said vertical axis, said radiating elements having a top surface;

producing first electromagnetic fields in said radiating elements;

providing a plurality of supports, and placing said supports parallel to said vertical axis and adjacent selected of said plurality of dipole radiating elements;

providing a plurality of metallic parasitic elements placed in a selected of said plurality of supports,

exciting currents in said metallic parasitic elements;

creating second electromagnetic fields radiating from said parasitic elements; and

canceling with portions of said first electromagnetic fields with said second electromagnetic fields.

28. The method of claim 27 comprising the further step of placing said parasitic elements midway between the top surface of said radiating element and ground plane of selected of said housings.

29. The method of claim 27 comprising the further step of orienting the radiating elements at a predetermined angle with respect to the vertical axis of the array.